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INDEX OF FARM REAL ESTATE PRICES  
SELECTED COUNTIES IN THE  
NORTHERN GREAT PLAINS STATES

by

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Introduction

There is a need in the land market work of this region for a more accurate statistical measurement of farm real estate price trends. In each of the recent quarterly reports, the average price of land sold during the current quarter is compared with the average for previous quarters. These quarterly average prices appear to be fairly useful in counties where the land is comparatively uniform in quality, but in counties where there is a wide variation in the quality of land, quarterly average prices may be very misleading. Even small changes in the proportion of high or low quality land sold from one quarter to another, may result in wide fluctuations in the average sales price per acre, even though there has been little change in the average sales price for any particular type of land.

The field workers, of course, do get a general picture of the situation in each county from conversations with local people and a great deal of reliance is placed on these local reports. A statistical measurement of price trend to supplement the information obtained from local observation would be of great value in analyzing trends in land prices.

For these reasons, the quarterly index of land prices, described in this memorandum, was developed. To date, index series have been computed for only 10 of the selected "land market" counties (see fig. 1). It is planned to add other counties to the index as rapidly as time permits. In the future, index numbers for each county will be included in the regular quarterly reports.

Description of the Index of Land Prices

The index numbers are computed from quarterly average ratios of sales prices to the 1942 assessed valuations of the sales tracts. If assessments were highly accurate, this procedure automatically would adjust the index for changes in average quality of land sold from quarter to quarter. It is well-known, however, that assessment inequalities do exist, which means that the use of assessed valuations introduces a certain element of error into the index computations. The amount of error is much less than the amount of assessment inequality which exists among the sales, because assessment inequalities tend to balance out each other, especially if the quarterly sample is large. Then, too,



various statistical devices are used to correct for some of the assessment inequalities. 1/

As a practical matter, no attempt was made to adjust for all possible assessment inequalities in any county and very few adjustments were made in the case of 4 counties. This means that the upward and downward movements of the index for any county may be influenced to some extent by uncorrected assessment inequalities as well as by actual changes in the level of land prices. Because of this, some caution should be exercised in interpreting the indexes. A small change from one quarter to another, for example, should not be considered significant. Nevertheless, it is believed that in the main these indexes are fairly reliable.

There is a remarkably close agreement between the index series and the information obtained from the interviews and observations made by the field workers. Usually, if the local informants believed that prices had gone up for any quarter, the index also shows this, and more often than not, the percentage increases are not greatly different. Where informants maintained that there had been little change in either price or volume of sales, the indexes invariably do not register much change. On the other hand, in those cases where the local informants reported no change in price, together with a greatly reduced activity in the market, the index numbers almost always decline. This may be due to the fact that the opinions of some local informants are influenced to a large extent by asking prices as well as by actual sales prices.

The trends in land values for each county, as indicated by the index series, are described in the following sections, together with a summarization of the information obtained from the quarterly interview reports. The index numbers for all 10 counties are given in table 1 and are shown graphically for each county in figures 2 to 11.

#### Dickinson County, Kansas

The index of land prices for this county has remained relatively stable throughout the 13 quarters covered by the land

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1/ The methodology for constructing the index of land prices and making the adjustments for assessment inequalities is somewhat more complicated than this brief description would imply. A more complete description of problems and procedure has been prepared in a separate memorandum which may be obtained on request.

# GREAT PLAINS REGION

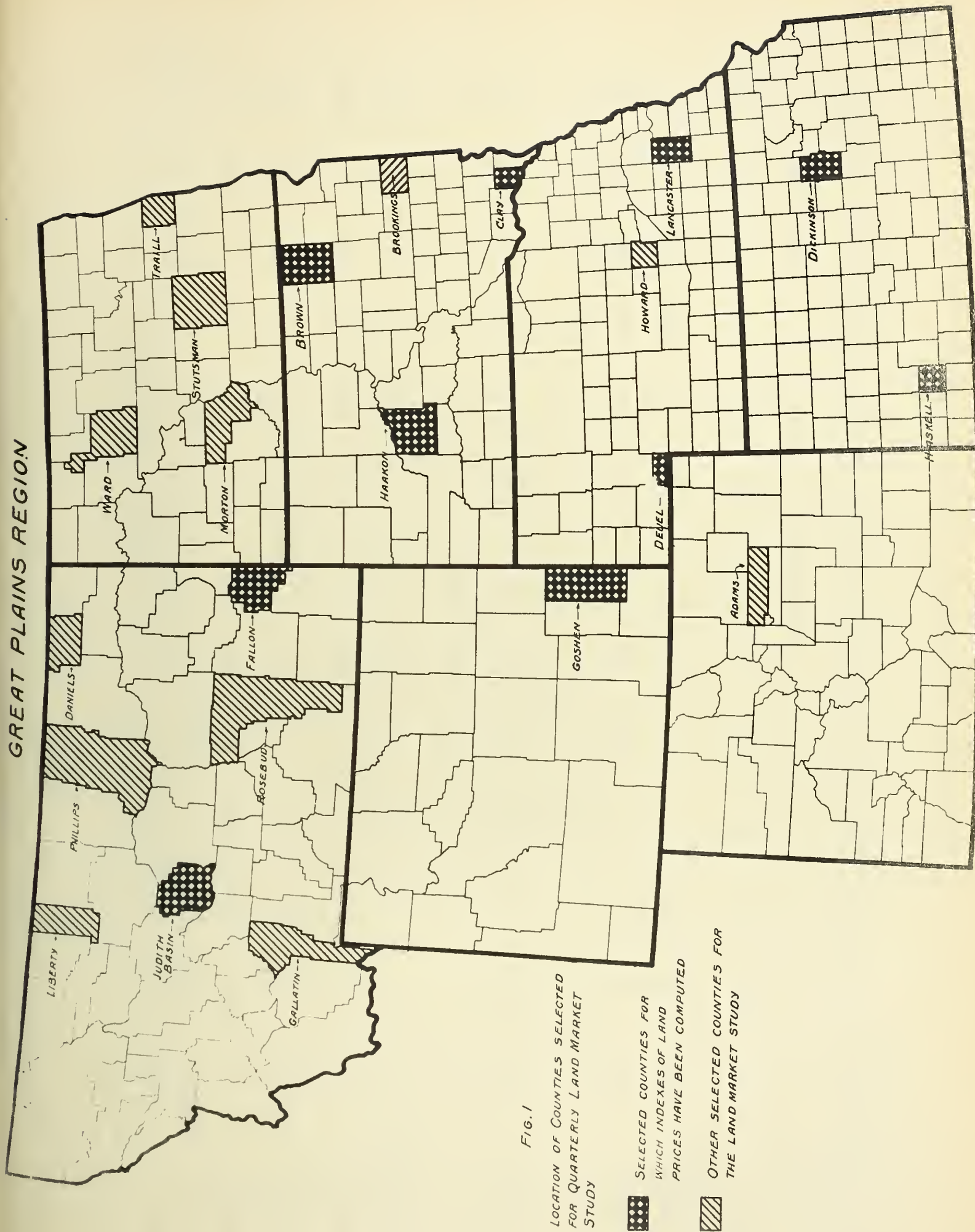






Table 1.- Quarterly index numbers of farm real estate prices,  
selected counties in the Northern Great Plains States, 1940-1943

1942 Average = 100

County	1940				1941				1942				1943			
	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th a/
Dickinson, Kans.	95	103	94	100	89	105	103	103	102	103	103	95	105	98	108	96
Haskell, Kans.	73	66	65	86	97	97	90	99	99	90	99	106	119	126	160	146
Fallon, Mont.	84	99	99	97	105	101	87	98	101	87	98	98	93	109	139	122
Judith Basin, Mont.	55	65	81	104	96	106	88	86	106	88	86	90	70	108	102	117
Deuel, Neb.	85	82	77	74	93	104	98	96	104	98	96	111	98	107	127	b/
Lancaster, Neb.	74	102	96	83	98	100	107	93	100	107	93	86	95	123	108	123
Brown, S. Dak.	81	100	82	88	77	101	82	105	101	82	105	107	100	118	121	116
Clay, S. Dak.	96	95	107	102	98	92	94	91	92	94	91	123	112	114	126	139
Haakon, S. Dak.	91	93	80	96	104	99	104	96	99	104	96	96	126	125	106	91
Goshen, Wyo.	95	102	87	93	88	91	102	83	91	102	83	109	91	115	144	117

a/ Preliminary.

b/ An inadequate number of sales, for which full consideration is known, prevents construction of the index number for this quarter.

market survey (fig. 2). Although there are minor fluctuations, there has been only a slight upward trend at the rate of 1.6 percent per year. 2/ This relative stability of land prices, as shown by the index, is borne out by the general conclusions reached by the fieldmen. Even the minor changes during 1942 and 1943 agree very closely with the fieldmen's observations, until the fourth quarter of 1943, when the index shows a slight decline, whereas the comments of local informants would indicate that there might have been a slight increase.

#### Haskell County, Kansas

According to the index numbers, land prices have more than doubled in this county since 1940 (fig. 3). This has not been the result of a steady sustained rise; rather, 3 distinct phases are discernible. The first is a sharp increase during 1941. Then land values leveled off and even declined. The third phase, beginning in the third quarter of 1942, is a steady and rather rapid upswing in price. These movements of the index check very closely with the observations and interviews made by the field workers. The average increase in price for the entire period covered by the survey is 28 percent per year.

#### Fallon County, Montana

The index numbers show a slight upward trend in land prices during 1941 and a slight downward trend during 1942 and the first quarter of 1943. There was a sharp upswing during the second and third quarters of 1943, with a slight price decline in the fourth quarter (fig. 4). The average rate of increase for the entire period is about 10 percent per year. The price changes for all quarters except the second and third quarters of 1943 are substantiated by the observations and interviews made by the field workers. The local people generally did not recognize the rapid rise in price indicated by the index in these 2 quarters. There are, however, a few exceptions. One informant in the second quarter of 1943 reported that land prices had gone up about 25 percent in the last couple of years and that cropland values had gone up the most, while poor grazing land had not changed much in value. Another informant in the third quarter of 1943 thought that land

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2/ Annual average price increases given in this report are computed from the trend line, fitted to index numbers by the method of least squares.

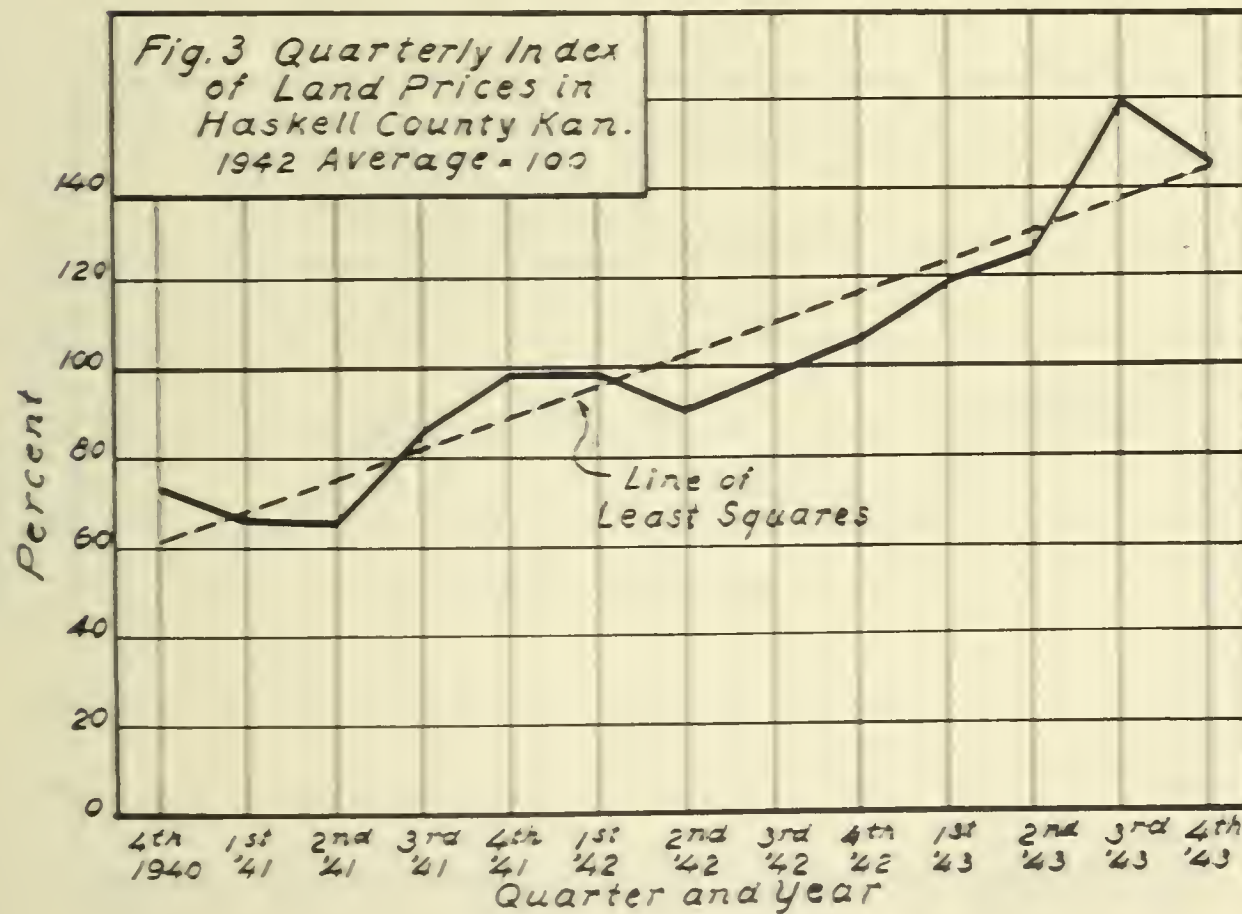
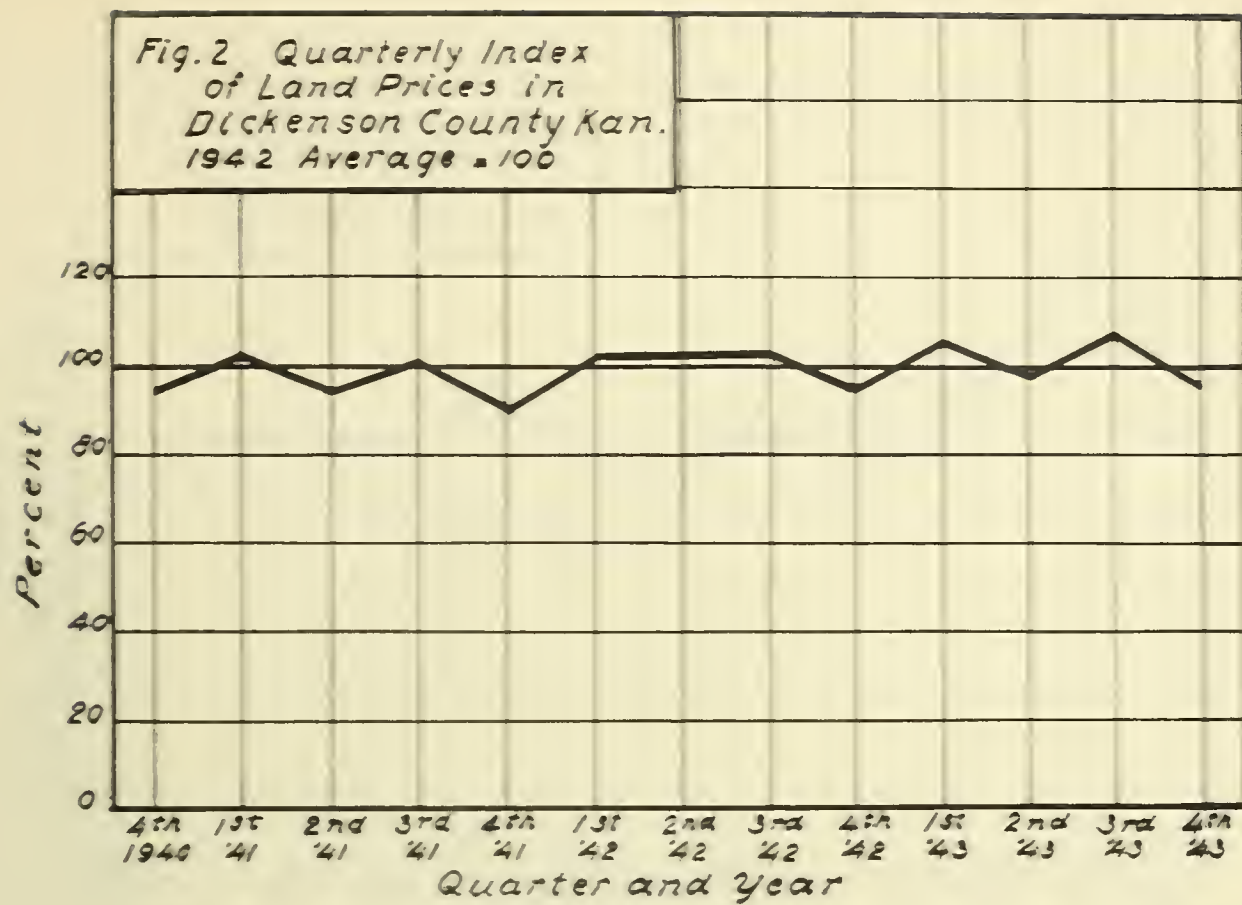






Fig. 4 Quarterly Index  
of Land Prices in  
Fallon County Mont.  
1942 Average = 100

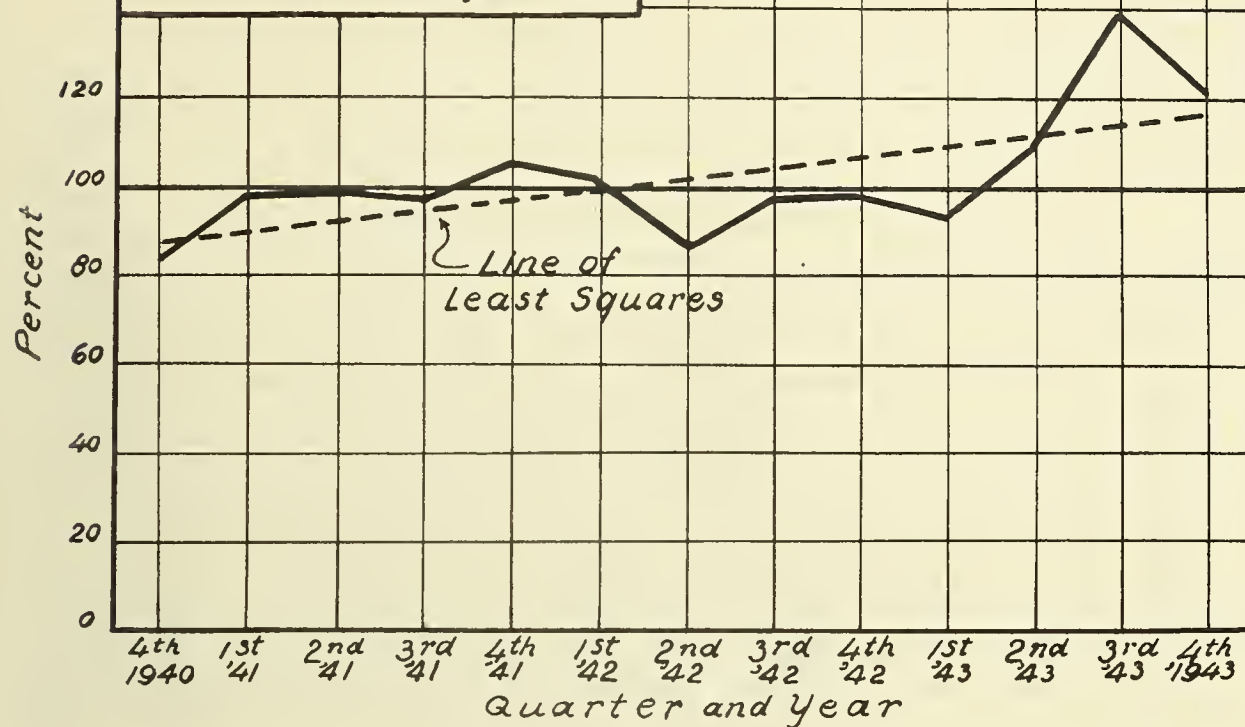
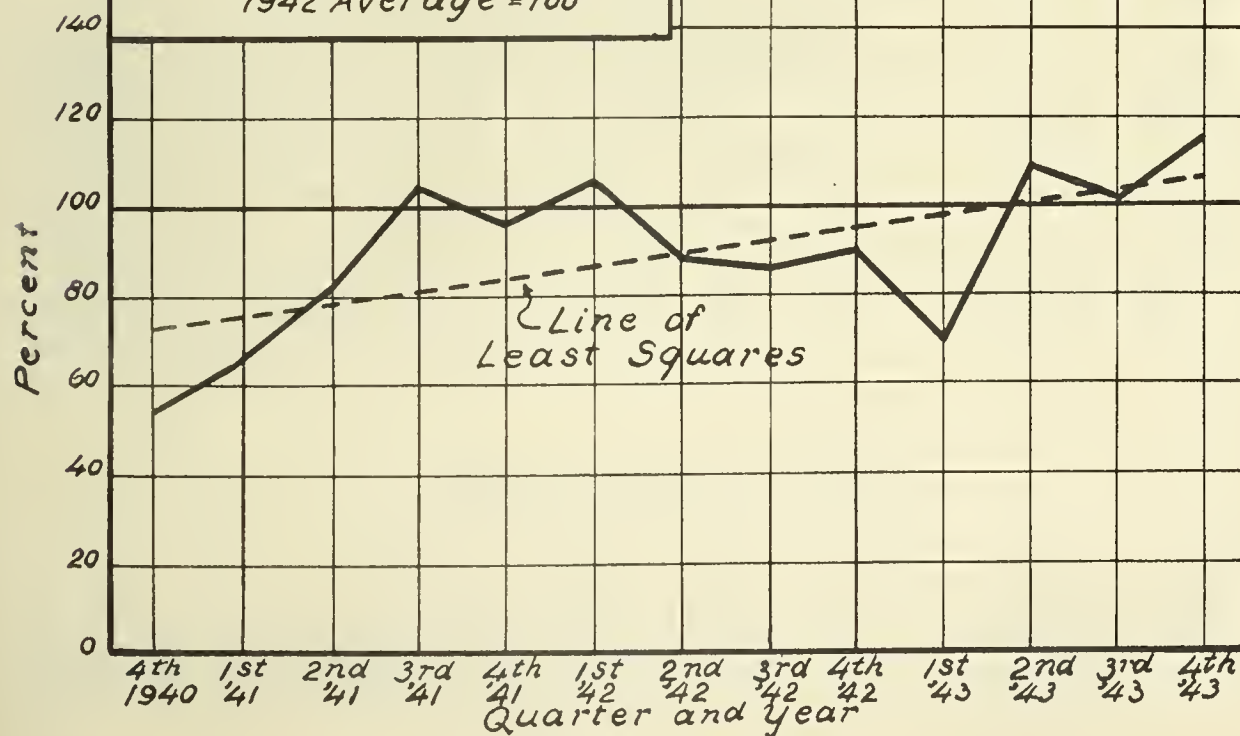


Fig. 5 Quarterly Index  
of Land Prices in  
Judith Basin Co. Mont.  
1942 Average = 100







with good buildings was moving at good prices, and still another thought that some people were paying too much for grazing land.

#### Judith Basin County, Montana

The land price index for this county has been very irregular. There was a sharp upswing during the first 4 quarters covered by the survey. This was followed by a downward trend for the next 6 quarters, which terminated in a sharp drop in the first quarter of 1943. The index numbers for the last 3 quarters of 1943 shot back up above the previously high points which had been reached the first quarter of 1942 (fig. 5). The average upward trend for the 13 quarters has been at the rate of about 12 percent per year. The observations made by the field workers substantiate the index numbers remarkably well. The rapid rise during 1941 was termed a "boom" by one of the informants who went to some length to explain the cause of the boom and to discuss ways of stopping it. There is some question whether land prices dropped as low in the first quarter of 1943 as the index would indicate. Local informants reported that the land market was unusually quiet that quarter and that prices were "steady". As previously noted, these opinions usually correlate with a small drop in the land value index and not with a big drop of over 20 percent, as in this case.

#### Deuel County, Nebraska

The index for this county indicates that the trend in land prices was slightly downward during the first 4 quarters of the survey. This was followed by a sudden rise in the last quarter of 1941 and the first quarter of 1942. Then for several quarters, the index fluctuated around the 1942 level with a definite upswing in the second and third quarters of 1943 (fig. 6). An inadequate number of sales for which full consideration is known makes it impossible to compute an index number for the last quarter of 1943. The average upward trend for the other 12 quarters has been at the rate of 14 percent per year.

#### Lancaster County, Nebraska

The index for this county is very irregular. This is one of the counties for which no satisfactory method for correcting assessment inequalities has been worked out as yet. Furthermore, the notes on interviews are less complete for this county than for

some of the others. Consequently, it is not known definitely whether the irregular movements of the index are due to the local peculiarities of the land market or whether the index numbers are influenced to a large degree by inequalities among assessments. Although it is questionable whether land prices in Lancaster County actually have moved up and down as widely as indicated by the index numbers plotted in figure 7, there is no doubt that the general trend has been upward. The trend line indicates an average annual increase of 10 percent.

#### Brown County, South Dakota

This is another county for which no attempt was made to correct for the effects of inequitable assessments in the construction of the index numbers. Although the index fluctuates rather widely from quarter to quarter, most likely due to uncorrected assessment inequalities, there is an unmistakable upward trend at an average rate of 12 percent per year (fig. 8). Although the index for this county is considered less reliable than those for most of the other counties, it correlates rather closely with field observations and interviews made subsequent to the second quarter of 1942. Prior to this particular quarter, the index numbers seldom agree with the observations and interview notes.

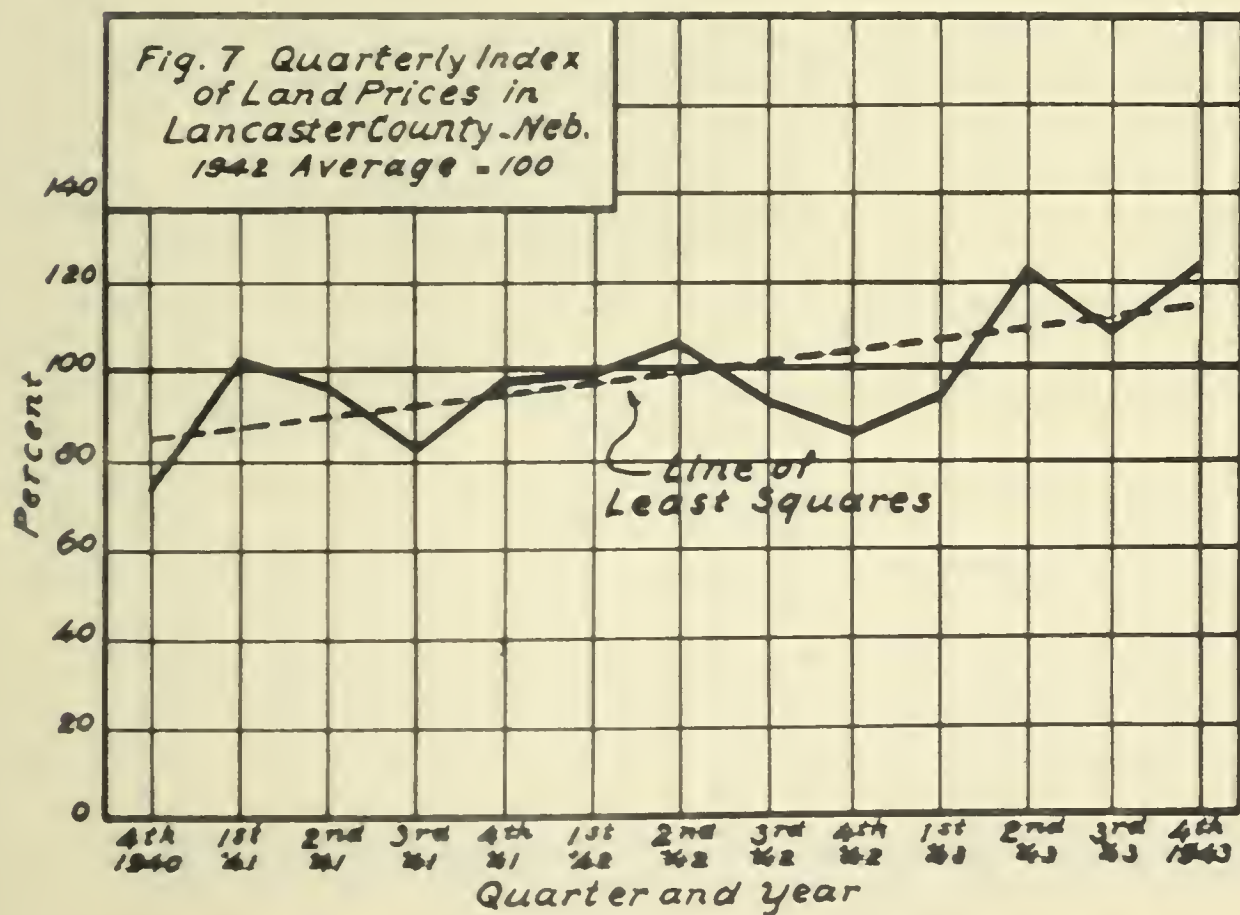
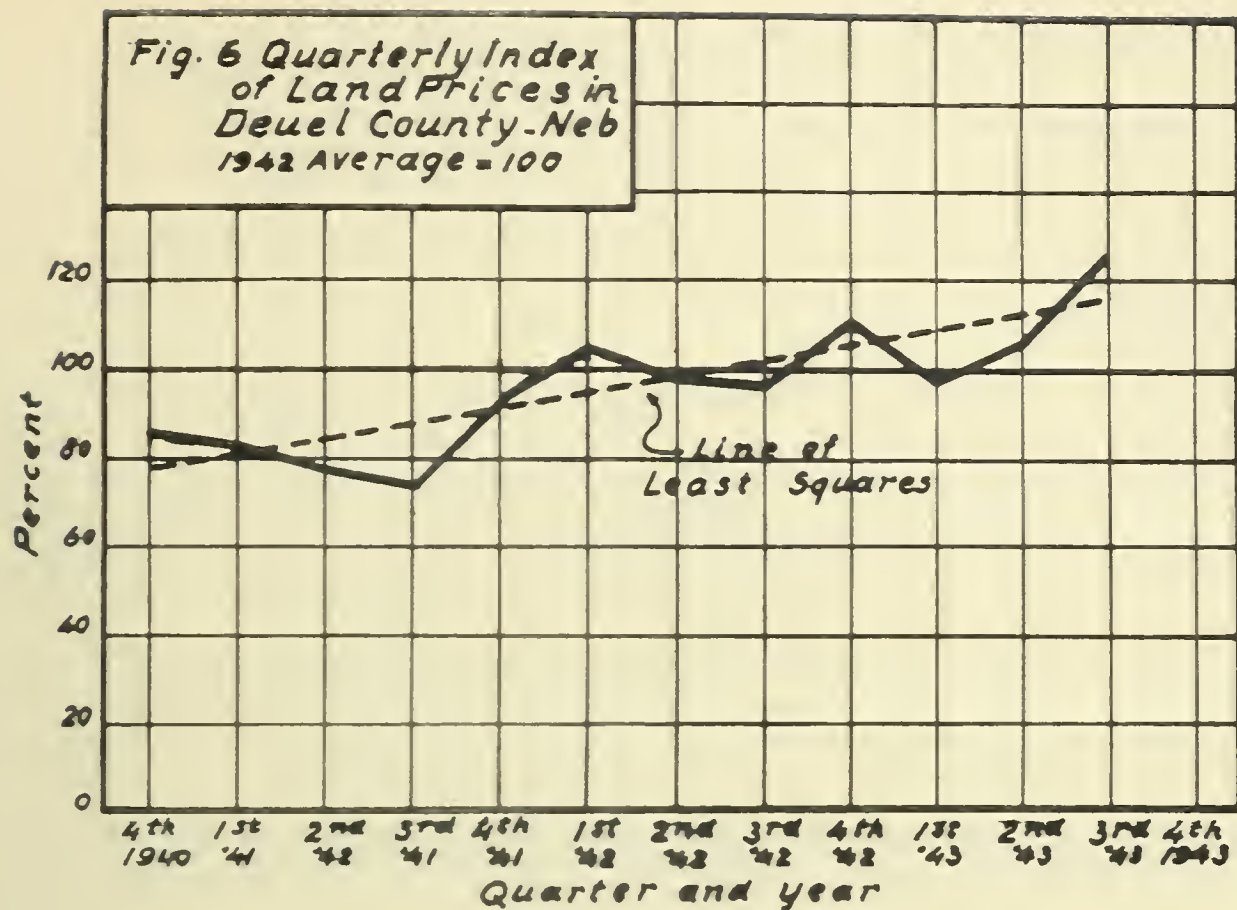
#### Clay County, South Dakota

The index for this county was comparatively stable for the first 8 quarters of the survey, with a marked tendency to decline. In the last quarter of 1942, however, the index suddenly shot up over 30 points and has increased even more since then (fig. 9). The average trend for the entire period is upward at the rate of 11 percent per year. The index correlates fairly well with the observations and interviews made by the fieldmen with one exception. The sudden increase in sales prices, which began in the fourth quarter of 1942 was overlooked for 6 months. No great increase in price was reported by local informants until the second quarter of 1943.

#### Haakon County, South Dakota

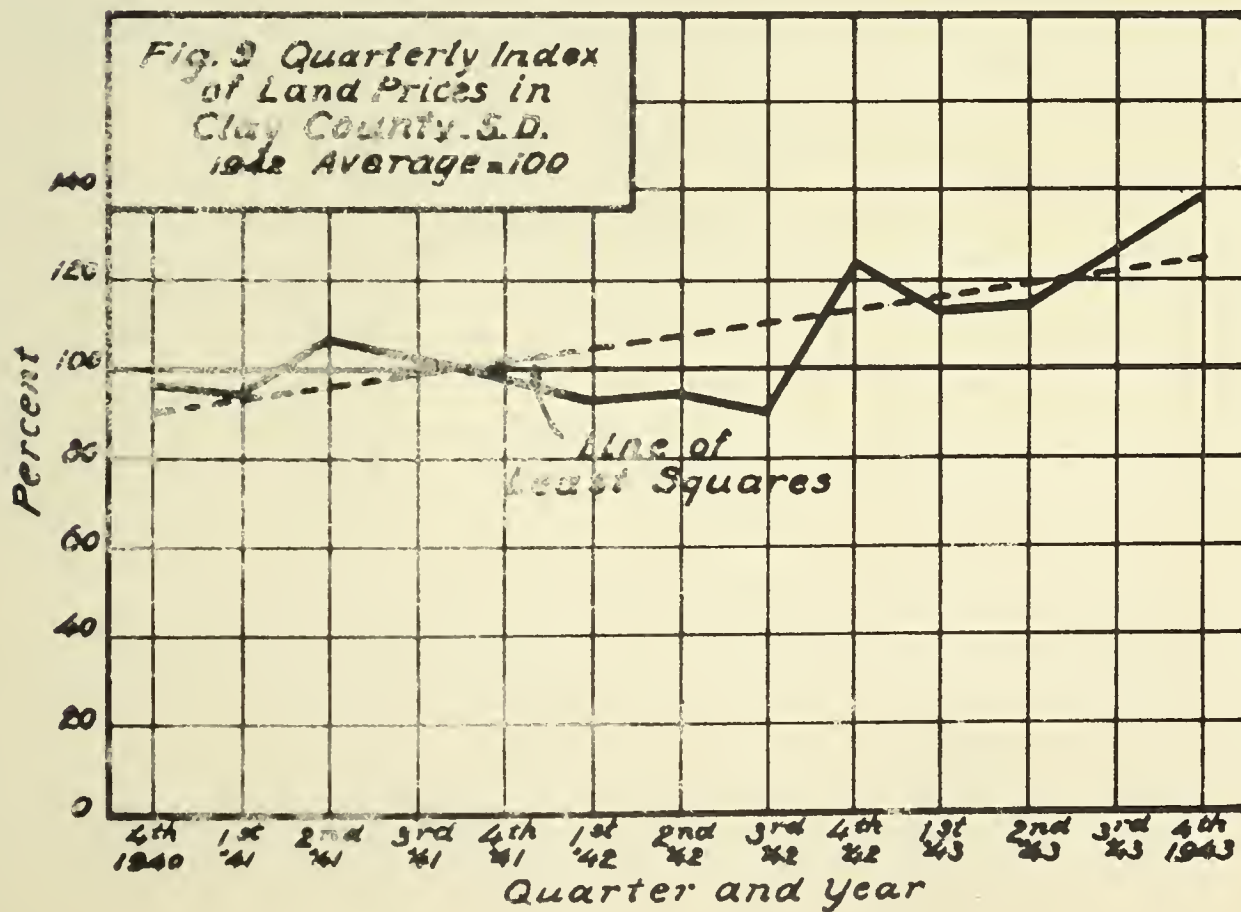
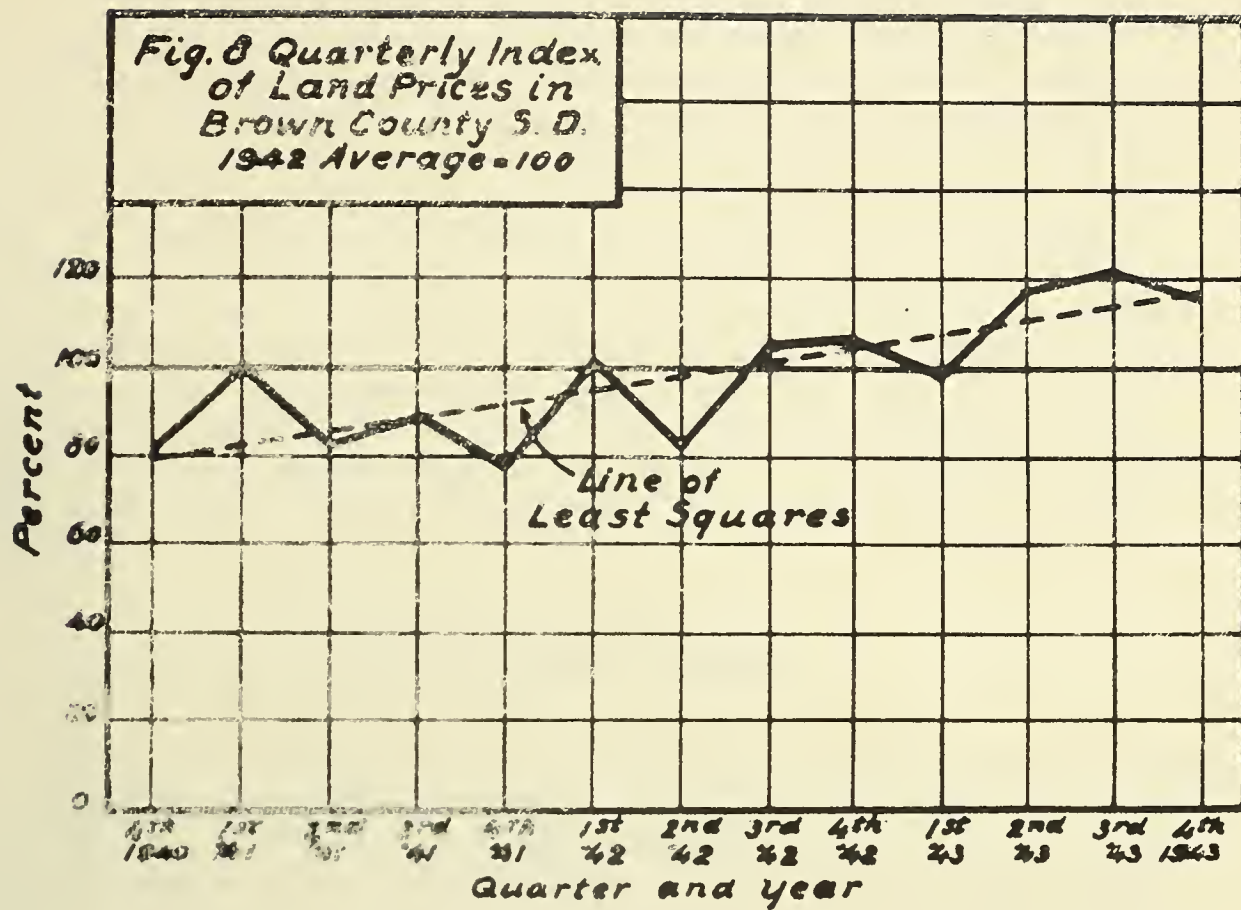
According to the index, there was an upward trend in 1941 which reached a high point in the last quarter. During 1942 the index was relatively stable with a slight downward trend. In













the first half of 1943, there was a sharp upward movement, which was followed by a sharp downswing during the last half, due in large measure to the sale of a large number of scattered tracts of State Rural Credit land at forced liquidation prices. Despite this downswing, there is an average increase for the entire 13 quarters of 7 percent per year. This index correlates very closely with the interview and observations made by the field workers. It is interesting to note, however, that there was considerable disagreement among informants during the first quarter of 1943, i.e., the quarter for which the index shows the greatest increase. Some informants were of the opinion that there had been no change in price while others maintained that there had been a big increase. One thought prices were up as much as 35 percent. The field worker was unable to determine what the consensus was, because some people were so pessimistic while others were so optimistic.

#### Goshen County, Wyoming

The index of land prices for this county indicates that there has been a slow and steady upward trend, which averages 7 percent per year (fig. 11). Although the index is irregular, with a tendency to swing rather widely at times, it correlates much closer with the interviews and observations made by the fieldmen than is the case with most of the other counties, and for this reason it is believed to be fairly reliable.

